

We claim:

1. A modular control system for an AC motor, comprising:  
a drive module housing an AC drive, the AC drive interconnecting the AC motor  
5 to a utility power source;  
a control module housing a control structure for controlling operation of the AC  
drive;  
a redundant power supply operatively connected to the control structure for  
supplying electrical power to the control structure; and  
10 an intermediate module interconnecting the control module and the drive module  
so as to electrically couple the control structure and the AC drive.

2. The modular control system of claim 1 wherein the control structure includes a  
control circuit operatively connected to the AC drive and a user interface for allowing a  
15 user to program the control circuit.

3. The modular control system of claim 2 wherein the intermediate module  
houses a bypass circuit for interconnecting the AC motor to the utility power source in  
response to failure of the AC drive.

20 4. The modular control system of claim 3 wherein the control circuit is  
operatively connected to the bypass circuit for allowing a user to program the bypass  
circuit.

25 5. The modular control system of claim 2 wherein the intermediate module  
houses a disconnect circuit for interconnecting the AC drive to the utility power source,  
the disconnect circuit disconnecting the AC drive from the power source in response to a  
user selected condition on the AC motor.

30 6. The modular control system of claim 2 wherein the user interface includes a  
keypad.

7. The modular control system of claim 1 further comprising a power module selectively connectable to the control structure, the power module including a secondary power source for supplying electrical power to the control structure independent of the utility power source.

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8. The modular control system of claim 1 wherein the redundant power supply is provided in the control module.

9. A drive system for an AC motor, comprising:  
a power unit housing an AC drive, the AC drive connectable to the AC motor and  
to a power source;  
an interface unit housing a programmable control circuit that controls operation of  
5 the AC drive;  
a redundant power supply operatively connected to the control circuit for  
supplying electrical power to the control structure; and  
an intermediate unit disposed between and interconnecting the power unit and the  
interface unit.

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10. The drive system of claim 9 herein the power unit includes a housing having  
an interior for receiving the AC drive therein, the AC drive having an input connectable  
to a power source and an output connectable to the AC motor.

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11. The drive system of claim 9 wherein the interface unit includes:  
a housing having an interior for receiving the control circuit; and  
a user interface for allowing a user to program the control circuit.

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12. The drive system of claim 11 herein the user interface includes a keypad and  
a display.

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13. The drive system of claim 9 wherein the intermediate unit includes:  
a housing having an interior; and  
a bypass circuit received with the interior of the housing and being connected in  
parallel with the AC drive, the bypass circuit interconnecting the AC motor to the power  
source in response to failure of the AC drive.

14. The drive system of claim 9 wherein the intermediate unit includes:  
a housing having an interior; and  
a disconnect circuit received with the interior of the housing and being connected  
5 in series with the AC drive, the disconnect circuit disconnecting the AC drive from the  
power source in response to a predetermined condition.

15. The drive system of claim 9 further comprising a power supply unit having a  
power supply selectively connectable to the control circuit for providing electrical power  
10 to the control circuit independent of the power source.

16. The drive system of claim 9 wherein the redundant power supply is housed in  
the interface module.

17. A drive system for an AC motor, comprising:  
a power module housing an AC drive, the AC drive connectable to the AC motor  
and to a power source;

5        an interface module housing a programmable control circuit that controls  
operation of the AC drive; and

        a power supply unit having a power supply selectively connectable to the control  
circuit for providing electrical power to the control circuit independent of the power  
source.

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18. The drive system of claim 17 wherein the power module includes a housing  
having an interior for receiving the AC drive therein, the AC drive having an input  
connectable to a power source and an output connectable to the AC motor.

15        19. The drive system of claim 17 wherein the interface module includes:  
        a housing having an interior for receiving the control circuit; and  
        a user interface for allowing a user to program the control circuit.

20        20. The drive system of claim 17 further comprising an intermediate module  
disposed between and interconnecting the power module and the interface module.

21. The drive system of claim 20 wherein the intermediate module includes:  
a housing having an interior; and  
a bypass circuit received with the interior of the housing and being connected in  
25 parallel with the AC drive, the bypass circuit interconnecting the AC motor to the power  
source in response to failure of the AC drive.

22. The drive system of claim 20 wherein the intermediate module includes:  
a housing having an interior; and  
a disconnect circuit received with the interior of the housing and being  
5 connectable in series with the AC drive, the disconnect circuit disconnecting the AC  
drive from the power source in response to a predetermined condition.

23. The drive system of claim 17 further comprising a redundant power supply  
operatively connected to the control circuit for supplying electrical power to the control  
10 circuit.